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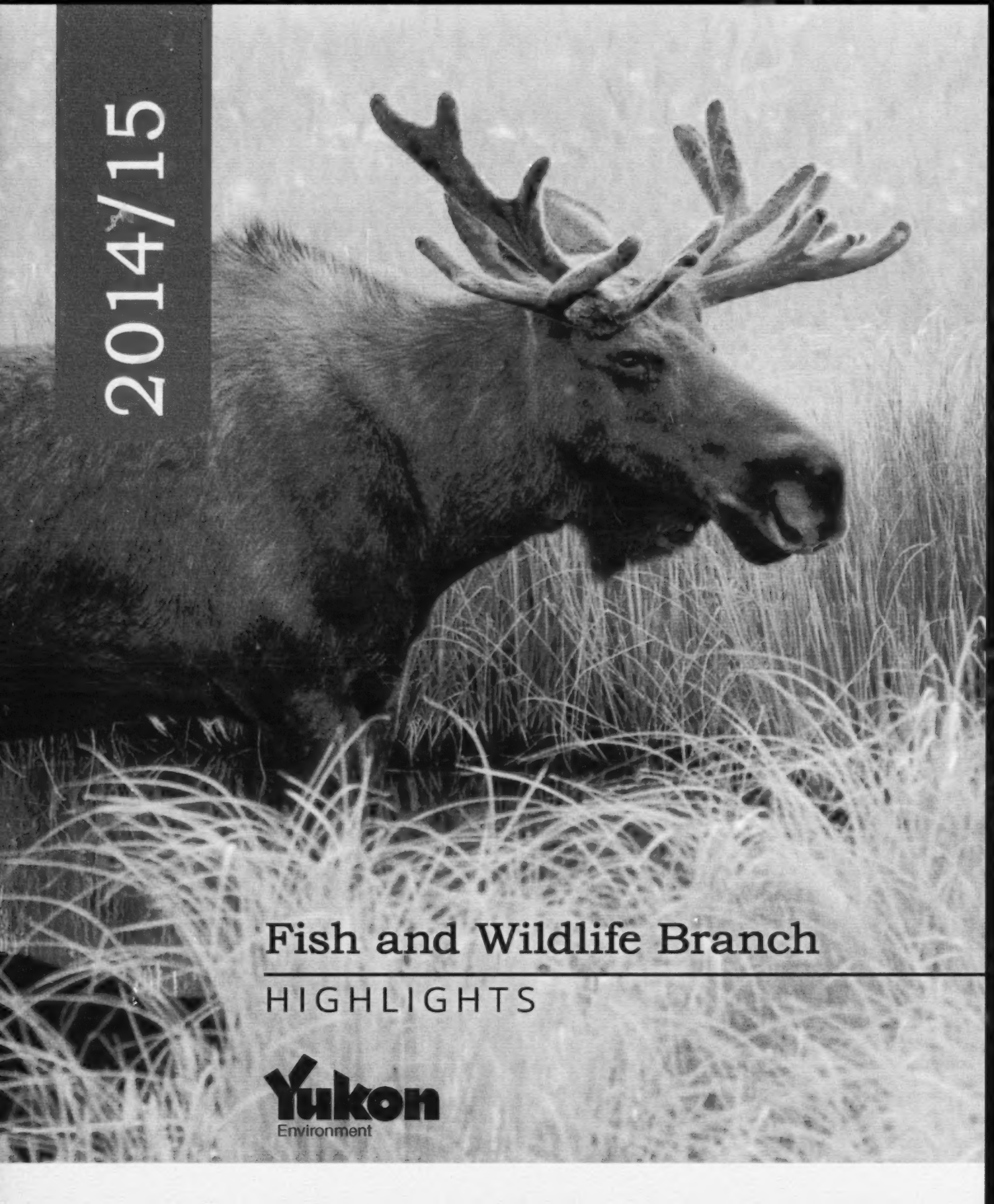

Fish and Wildlife Branch

HIGHLIGHTS

Yukon
Environment

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We foster informed, inclusive decision making, generate and share knowledge, and guide others to act responsibly and respectfully with the environment. We strive to safeguard Yukon's ecosystems.

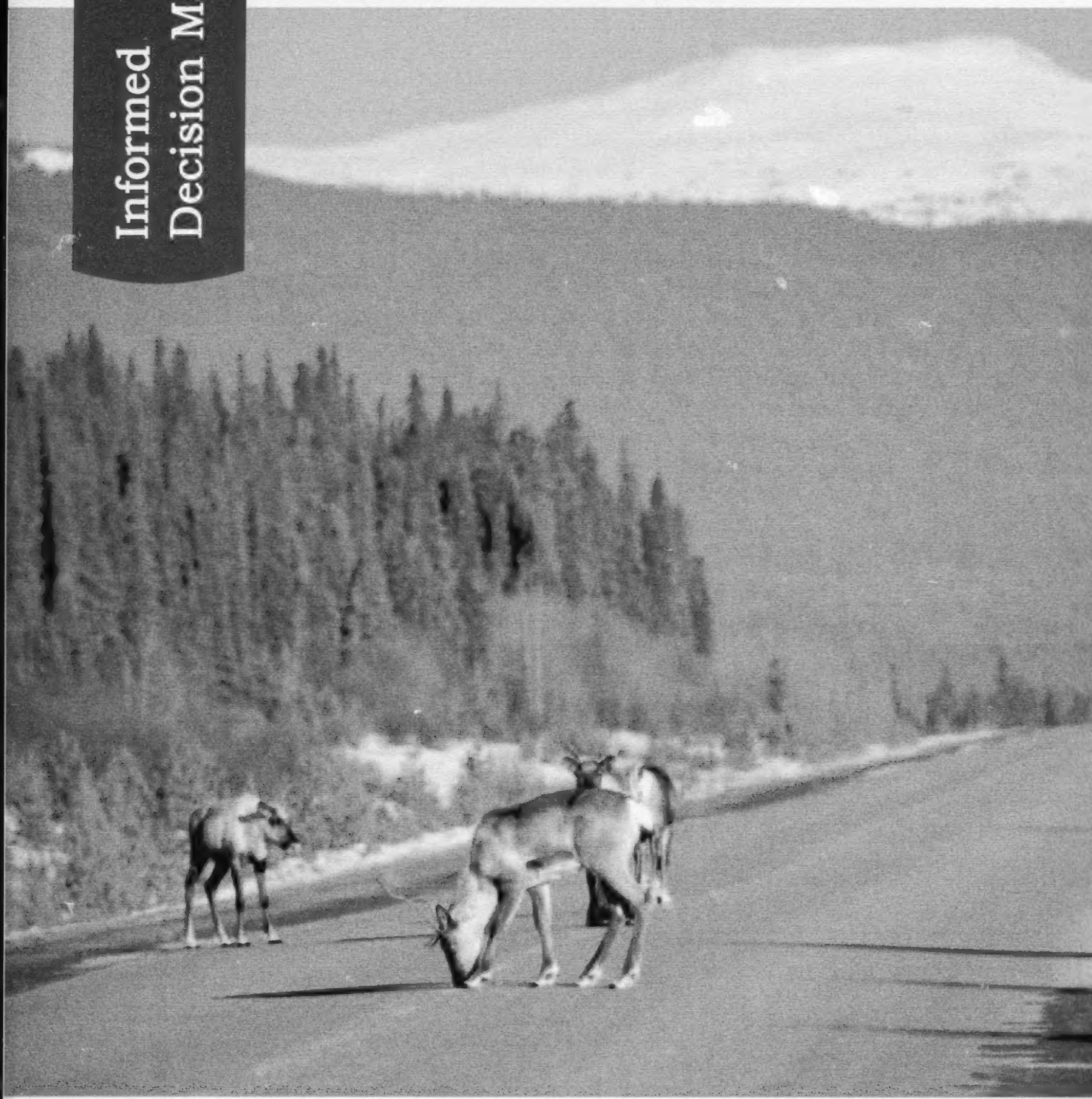
Environment Yukon's Mission Statement guides the work of the Fish and Wildlife Branch. This report highlights some of the projects and accomplishments of 2014-2015 that demonstrate how we put these words into action.

If you would like more information about any of our projects, visit Environment Yukon's website www.env.gov.yk.ca

Fisheries biologist helping kids learn about aquatic invertebrates at Scout Lake.

Informed Decision Making

Technical information gathered through our studies along with local and traditional knowledge gathered and shared with us by our management partners help us develop collaborative solutions for management issues. Ensuring we have the best information available to make these decisions drives much of our work.



Southern Lakes Caribou Range Assessment

At the time of the Gold Rush, the Carcross caribou herd numbered in the thousands and provided food for First Nations and new settlers to the territory. But by the early 1990s, the Carcross herd had been reduced to approximately 400 animals. In 1992, concern over declining caribou numbers in the Southern Lakes area led to the formation of the Southern Lakes Caribou Steering Committee, which developed a collaborative management plan that included harvest restrictions for licensed hunters and a voluntary hunting closure for First Nations. Since 1997, the population size of the Carcross herd has roughly doubled.

Today the herd still faces many challenges. Its range is in one of the most densely populated areas in Yukon and many parts of its habitat face development pressures. To address the need for a more comprehensive approach to understanding the cumulative effects on the herd's range, we undertook a range assessment. This assessment identifies key risk factors and provides recommendations for maintaining the integrity of the Carcross herd's seasonal habitats and known migration routes, and reducing population-level impacts. It also addresses recommendation 2.18 of the Southern Lakes Wildlife Coordinating Committee Southern Lakes Regional Wildlife Assessment regarding Southern Lakes caribou herds.

This risk assessment suggests that the Carcross herd has relatively low ecological resilience. This vulnerability and reduced resilience is largely due to the cumulative and interacting effects of:

- Rural residential, agricultural and industrial development within winter range.
- Timber and fuelwood harvesting.
- Expanding road and trail networks.
- Severe wildfire events.
- Increasing backcountry recreation activities.
- Mortality from vehicle collisions.
- Climate change and its effect on weather and snow conditions.

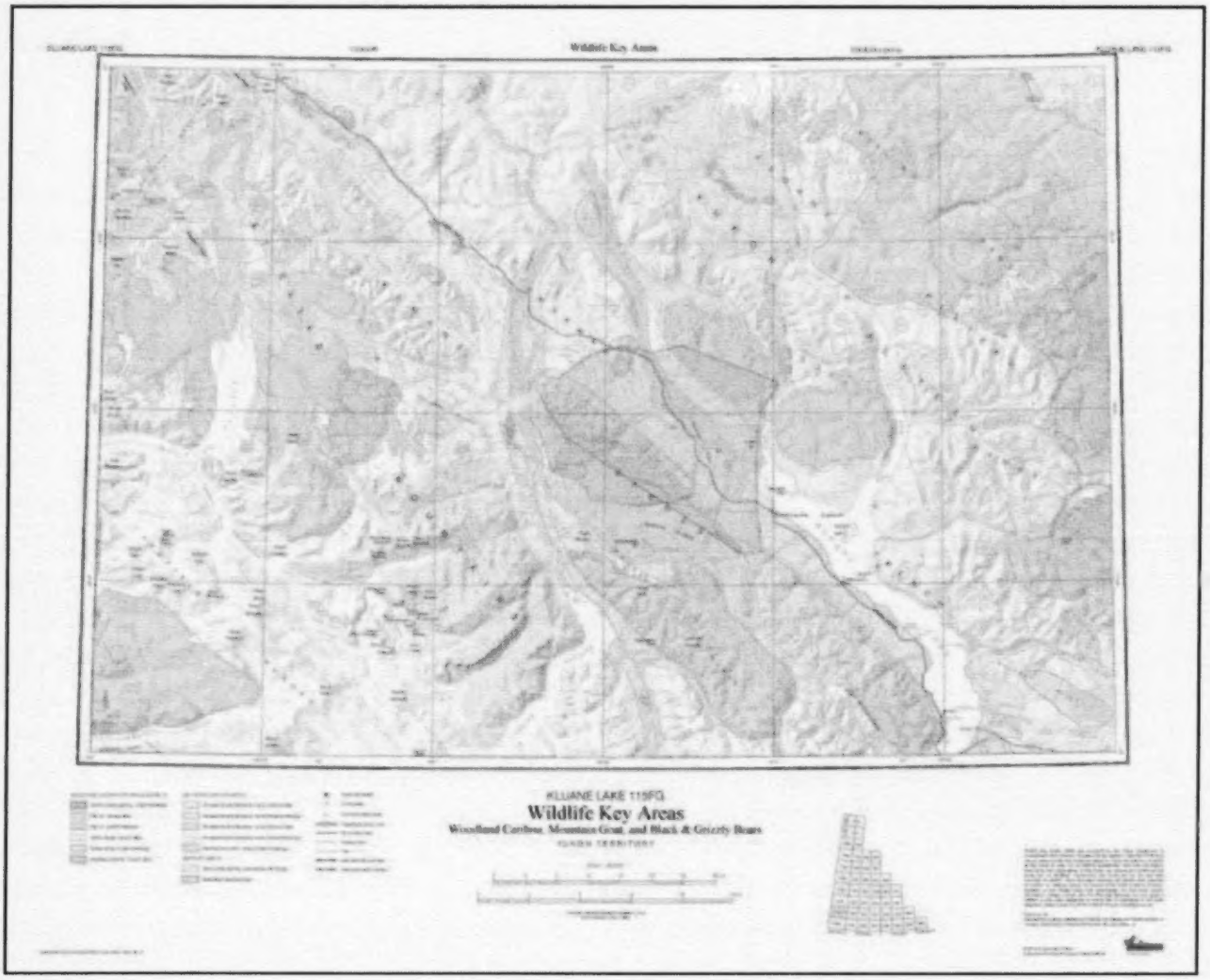
Of these factors, human-caused habitat loss and disturbance within the winter range is likely the primary factor that can be managed through current and future land use planning, disposition, and assessment processes.

The final assessment provides key recommendations to help address these concerns and advice about how to carry out ongoing monitoring in the area.

Wildlife Key Areas

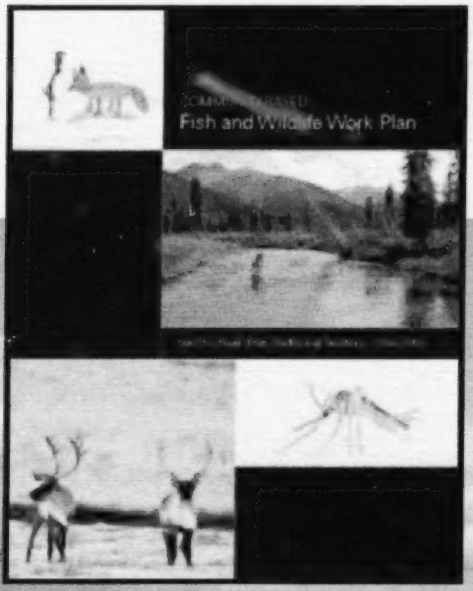
Wildlife Key Areas (WKA) are areas that are most restricted in availability, most valuable, or where wildlife is most vulnerable. It is important to identify WKAs so that they may be considered during development assessment reviews and land use planning. Regular surveys are central to ensuring that the information in the WKA database is up-to-date and comprehensive.

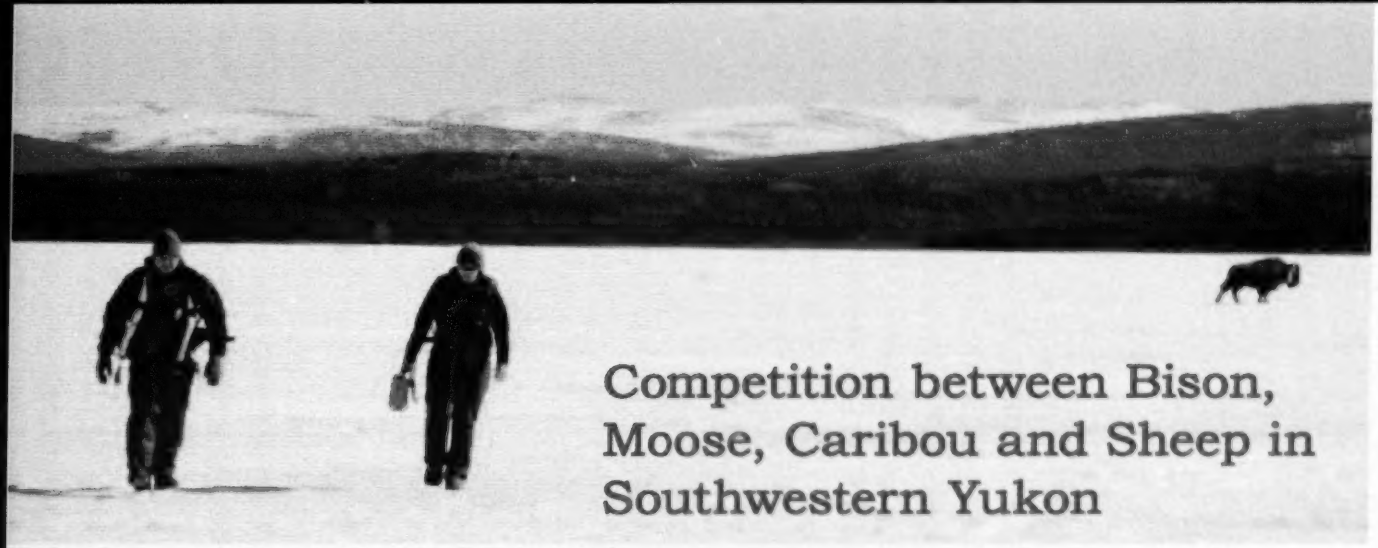
The priority WKA surveys for 2014-2015 were in the Rackla area (the Nadaleen, Tasin, and Lansing ranges); in the Teslin area; and in the Dawson City area.



Na-Cho Nyäk Dun Community Plan

This year we completed our fifth Community Fish and Wildlife Workplan for the Na-Cho Nyäk Dun Traditional territory. This collaborative plan developed with the Mayo Renewable Resources Council (RRC) and Na-Cho Nyäk Dun First Nation set out goals, objectives and recommendations related to management of important fish, wildlife and habitat values in the region. This plan helps prioritize department budgets and identify projects based on community input.





Competition between Bison, Moose, Caribou and Sheep in Southwestern Yukon

After the last ice age, bison roamed across Yukon in great numbers. However, changing habitats and other factors led to their decline and eventual disappearance around 350 years ago. In the 1980s, a small group of bison was reintroduced to the Yukon near Aishihik. Even though bison used to be part of Yukon's ecosystem, local people were concerned about potential competition between reintroduced bison and resident moose, caribou and sheep. When a community-based management plan for bison in the region was developed, a key action was to better understand the potential impact of bison on these other species.

To do this, the Fish and Wildlife Branch used a combination of existing data and new field data to find out if these different species used the same resources (e.g., food and habitat) from the same places at the same time. A collection of scat samples permitted an analysis of comparative diets, while existing survey data allowed for the development of statistical models of habitat use. A late-winter aerial survey was also conducted to identify if these species were in the same space at the same time during critical seasons.

Key findings included:

- Bison, caribou, and moose do not appear to compete for the same food or habitat. Bison and moose are on opposite sides of the diet spectrum, and caribou are more intermediate. Because of differences in diet, seasonal overlap of habitat use for these species is low.
- Bison and sheep are both grazers and have similar diets. However, because there is likely a lot of food available to them, and they used different habitats seasonally, the potential for competition may not be as high as suggested by diet overlap alone.
- Aerial surveys showed that the distribution of the different species (bison, moose, caribou and sheep) across the landscape was not influenced by interactions with each other. That is, they were neither found more in common, or away from one another, suggesting that the presence of bison did not affect that of moose, caribou, or sheep.

Overall, the studies found little evidence that there was potential for competition between bison and other local ungulate species.

The results of this research make sense since bison were once an abundant species in the area and likely evolved to co-exist with moose, caribou and sheep.

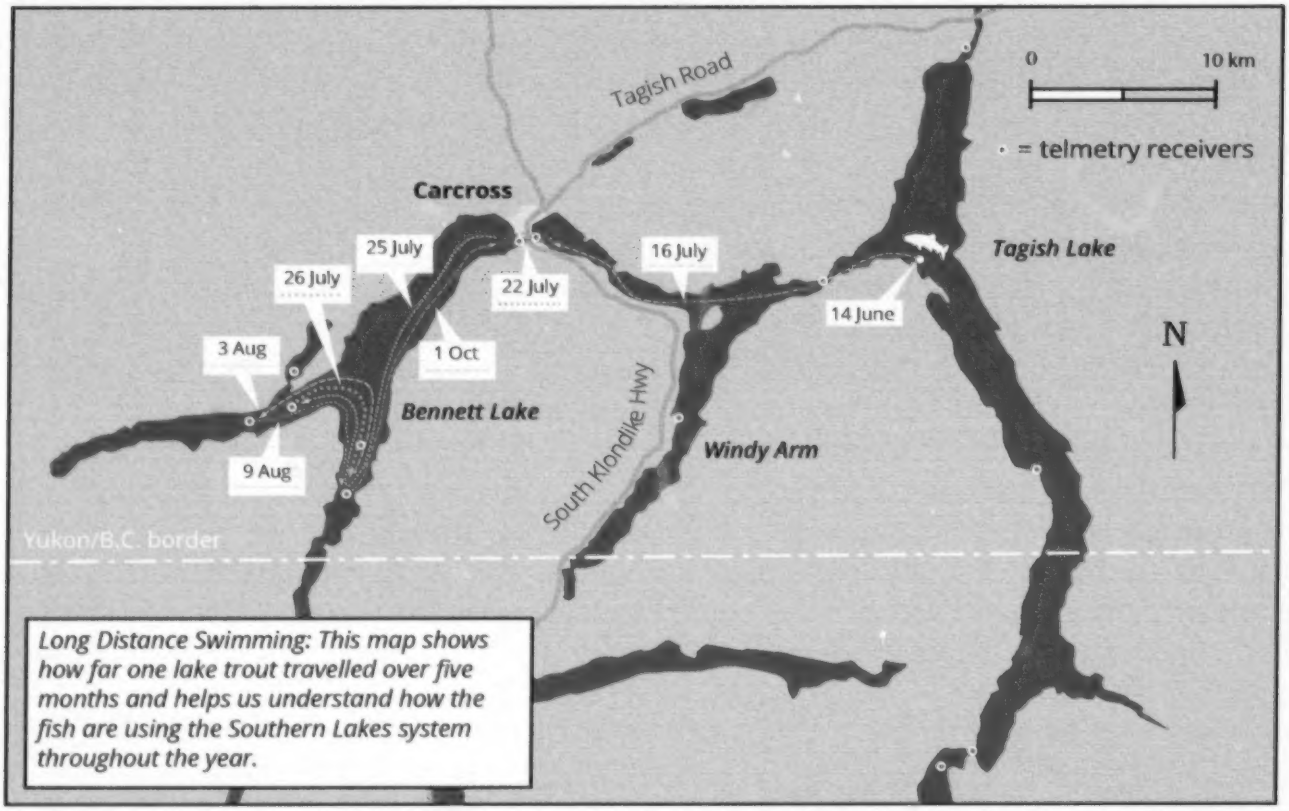
***Licensed harvest data for the 2008-2009 to 2013-2014 hunting seasons** (last six years).*

	Bison	Moose	Caribou
Number hunted	854	3833	1838
Average meat yield	525	400	200
Total meat yield	**448,350**	**1,533,200**	**367,600**
Average annual meat yield	74,725	255,533	61,266

Bison as a Food Source

Because we have such a healthy bison population, Yukoners started hunting bison in 1998. Since then, licensed Yukon hunters have harvested about 818,000 pounds of bison meat – an average of 48,000 pounds of meat each year – making it the second most important source of meat for licensed Yukon hunters after moose.

Seasonal Lake Trout Movement – Southern Lakes



This multi-year project is designed to help understand how lake trout use the large Southern Lakes system including patterns of annual migrations for feeding and spawning. This information will provide insight into their life history, movement and harvest.

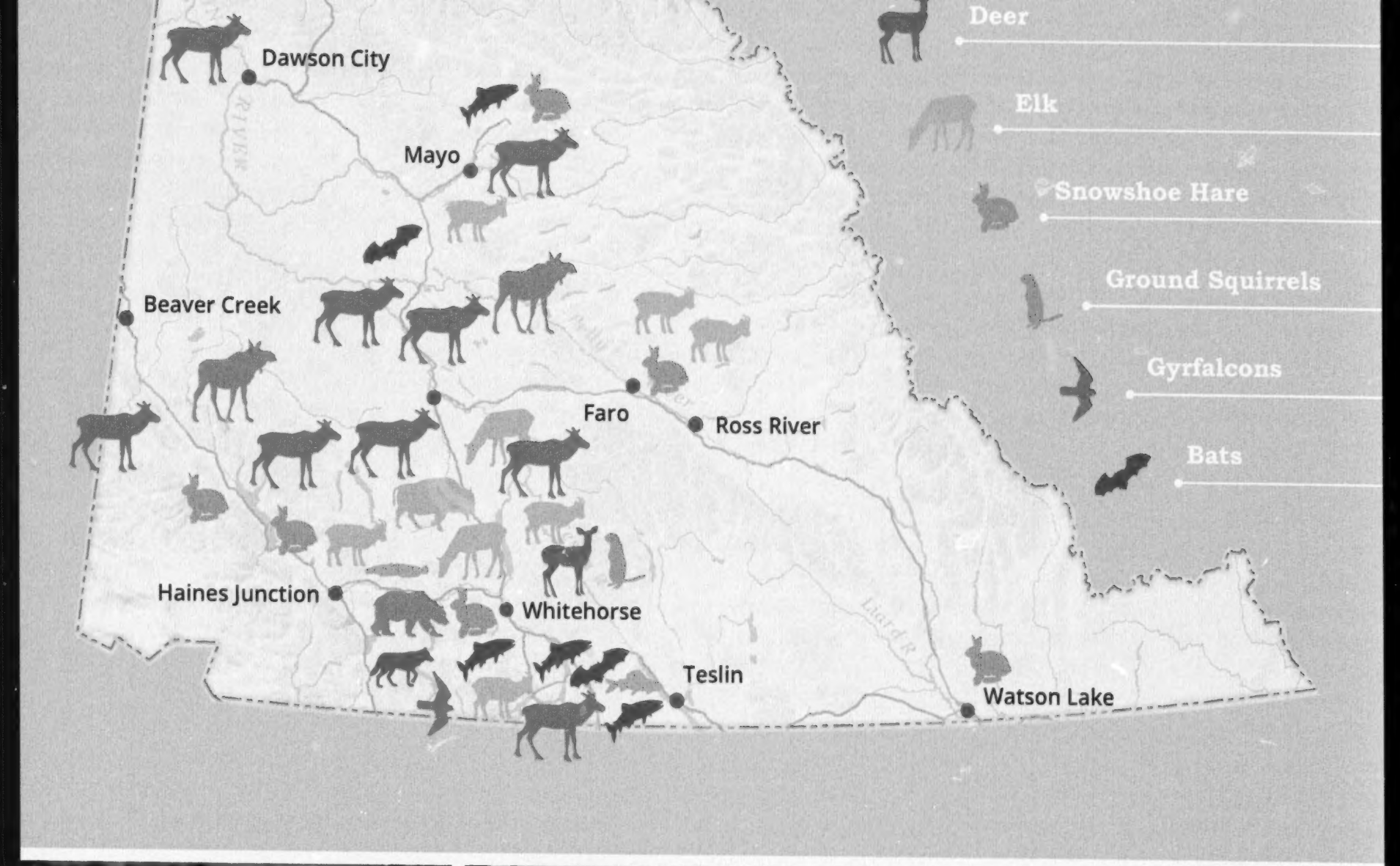
This year, we placed 18 receiver stations in locations around the lake system and placed transmitters on 75 different lake trout. Over the year, more than 127,000 detections were logged at the different stations. The B.C. Ministry of Forest, Lands and Natural Resource Operations became a project partner, placing transmitters on 38 fish and installing six receivers in Atlin Lake.

After analyzing the 2014 data, we found that lake trout move extensively among lakes in this system, and can travel long distances in short periods of time. In one case, a lake trout moved from Bennett Lake to Tutshi Narrows – a distance of 80 kilometres – in 3.5 days. We also found that male lake trout return to spawning locations the year after capture, suggesting an annual spawning frequency and fidelity to specific spawning areas.

2014 was our first year of data collection for this project. Our work on lake trout movement and genetics in the Southern Lakes will continue for another few years, and will contribute to the sustainable management of lake trout in this important lake system.

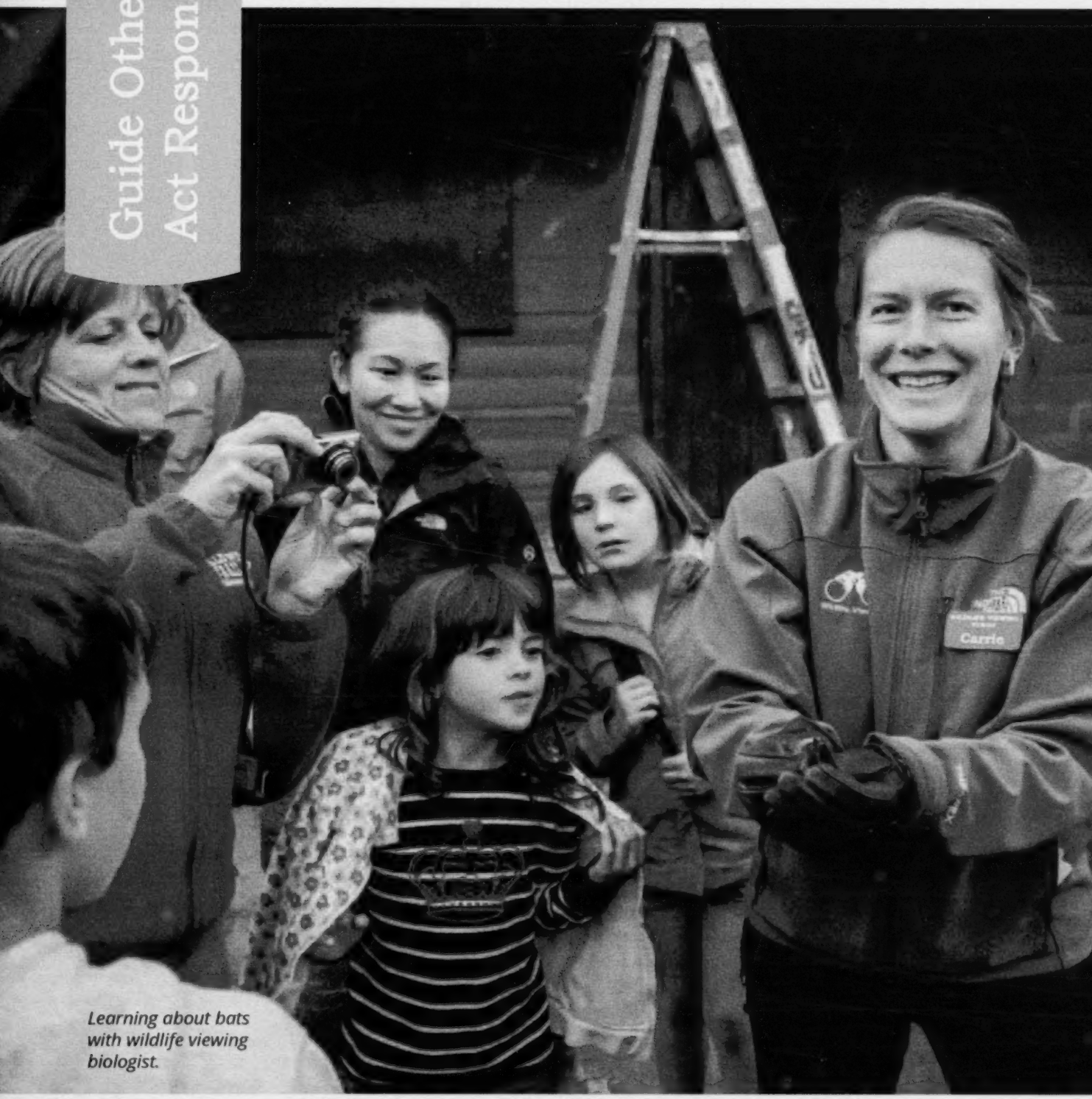
Generate and Share Knowledge

Each year, we conduct studies and surveys that establish baseline information or monitor changes to populations and habitats to help us make decisions around things like harvest management and environmental assessments.


Deer
Elk
Snowshoe Hare
Ground Squirrels
Gyrfalcons
Bats
Dawson City
Mayo
Beaver Creek
Faro
Ross River
Haines Junction
Whitehorse
Teslin
Watson Lake

Guide Others to Act Responsibly

We provide educational programs, viewing opportunities and demonstrate best practices to ensure Yukoners have the knowledge and tools to help conserve our wildlife resources.



Learning about bats with wildlife viewing biologist.

Wildlife Viewing: Events and Information

Throughout the territory and throughout the year, the branch's Wildlife Viewing Program special events and programs create opportunities for residents and visitors to engage in watching and learning about wildlife. More than 4,000 people participate in our events each year.

Interpretive walks, talks and public presentations are organized within the annual Wild Discoveries summer series and focus on a variety of issues related to wildlife management and appreciation. These events provide a place for Environment Yukon biologists and other researchers to communicate their findings and knowledge of Yukon's wildlife to the public. The public is directly engaged with experts in the field who are able to answer questions and better inform Yukoners. We develop wildlife interpretive products such as brochures, booklets, webpages and posters.

Our programs enhance visitor experiences in Yukon, foster greater understanding and appreciation in residents and visitors for the natural attributes of Yukon, and increases opportunities for residents and visitors to engage in conservation and stewardship.

To encourage stewardship, raise awareness of biodiversity issues, and develop local viewing opportunities, publications and sites are developed with partners.

Whitehorse

Maintain existing signage in the city's significant wildlife areas, and contribute to the development of new signage as needed.

Top of the World Highway

Create new signage for the Top of the World Highway rest stop and interpretive activities regarding the 40 Mile caribou herd.

Keno

Work with local community members to update and maintain the Alpine Interpretive Centre and provide safe and respectful access to the alpine.

Faro/Ross River

Continue to work with the community to provide viewing opportunities and support the Crane and Sheep Festival.

Destruction Bay

Partner with the RRC and community members to update their wildlife information kiosk and highlight local assets, providing opportunities for travellers passing through to learn about the area.

Haines Junction

Partner with the Conservation Data Centre and the Yukon Bird Club to update the content of the panels (including species at risk information) by the swallows' nests at the Haines Highway weigh scales.

Wye Lake and Carcross

Update and reprint the Wye Lake and Carcross viewing wildlife publications.

Event	Location	Description
Orchid Acres	Dawson	An easy stroll through the orchid patch in West Dawson.
One Fish, Two Fish	Haines Junction	Talk and learning game about the fish of Dezadeash and its unique ecosystem.
King's Throne Alpine Adventure	Haines Junction	A guided hike looking for alpine wildlife.
Boreal Owl Spotting	Ibex Valley	A private resident invited us to see the nesting owls on his property.
You're Kidding	Jakes Corner	A walk up Mount White interpretive trail to look for goat kid.
Pika Palace	Keno City	Guided interpretive walk with Regional Biologist about alpine wildlife.
Shorebirds of Swan Haven	Marsh Lake	A short walk and talk about shorebirds at Swan Haven.
Paddling the Lewes	Marsh Lake	A guided canoe day trip through the M'Clintock mud flats to look for birds.
Liard Canyon Walk	Watson Lake	A guided walk to the Liard River.
Mushroom Power Up	Whitehorse	Mushroom walk and talk.
Ahhhhhh Nuts!	Whitehorse	Walk and talk about Red Squirrels.
Wandering for Wolves	Whitehorse	Short walk to an abandoned den site to talk about wolf ecology.
Going Batty	Whitehorse	Talk and bat trapping/banding demonstration.
Yukon's Great Salt Lake	Whitehorse	A guided walk to the Takhini Salt Flats with Bruce Bennett to talk about this unique ecosystem.
Busy Beavers	Whitehorse	Fall beaver behaviour and ecology.
Elk Bugling	Whitehorse	A guided walk to listen for the Takhini elk herd and bugle for them.
Wetlands in Winter	Whitehorse	A short walk at McIntyre Marsh.
Frog Walk	Whitehorse	Short walk to Rat Lake to hear Wood Frogs calling during mating season.
Ground Squirrel School	Whitehorse	A walk and talk in Takhini North with ground squirrel researchers in Yukon.
Eagles New Home	Whitehorse	An interpretive station describing Bald Eagles and their nesting behaviour.
Knee High Nature	Whitehorse	Nature appreciation activities for children aged four to six years.
Real Raptors	Whitehorse	Presentation by American Bald Eagle Foundation including live birds of prey.

Safeguard Ecosystems

We track the effects that climate change, development and human activities have on sensitive populations. This information helps inform future decisions.

Habitat Protection Areas: Inventory, Assessment and Monitoring

This is an on-going, multi-year project to assess the status of Habitat Protection Areas (HPA) through inventory and monitoring of significant fish, wildlife, and habitat values. The priorities, timelines and deliverables these showcase are a reflection of approved HPA plans or developed in conjunction with the HPA steering committees and their work plans. This year, our efforts focused on the Whitefish Wetlands and Ddhaw Ghro HPAs.

During the initial phase of management planning for the Whitefish Wetlands HPA, community members identified a number of values, including whitefish and wetland interests. Our inventory work examined wetland function and how wetlands could be impacted by activities in the surrounding area. We also took the opportunity to identify key habitats in the area.

We conducted a sheep survey in Ddhaw Ghro to establish a current population estimate. It had been 11 years since the last census of this small, isolated population.

North American Caribou Conference

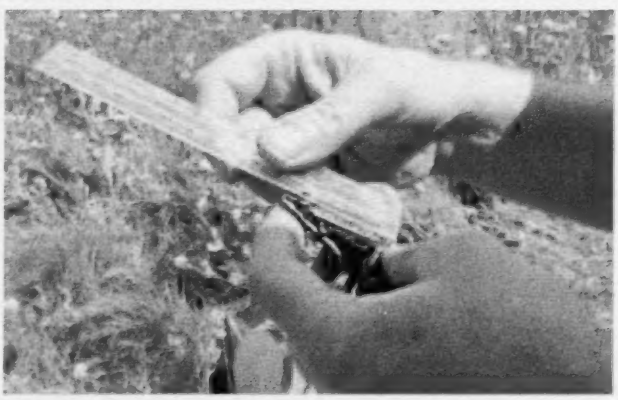
Yukon hosted the 15th North American Caribou Workshop in Whitehorse May 12-16, 2014. Nearly 300 people from around the world registered and attended the workshop. Hosting the North American Caribou workshop allowed Yukon to learn from and exchange information with biologists, managers, resource users and other stakeholders interested in caribou research, management and conservation. This presented an important opportunity to highlight Yukon's expertise and experience in the area of caribou management and conservation.

Conservation Data Centre Assessment

The Yukon Conservation Data Centre (CDC) is responsible for supporting status rankings for all species in Yukon. Collected information is critical for land use planning, environmental assessments, and meeting the obligations of agreements including the Canadian Biodiversity Strategy and the National Accord for the Protection of Species at Risk.

Yukon CDC's role is to gather, maintain, and distribute information on wildlife and ecological communities of conservation concern in the territory, and coordinate assessments to determine conservation status for all Yukon species. The Yukon CDC's database currently lists and tracks information on the locations and conditions of 346 species of conservation concern in Yukon.

By providing information on rare species and ecosystems the Yukon CDC supports agencies involved with land-use planning, species at risk recovery planning, environmental impact assessments and meets national and international agreements, plans, or strategies.

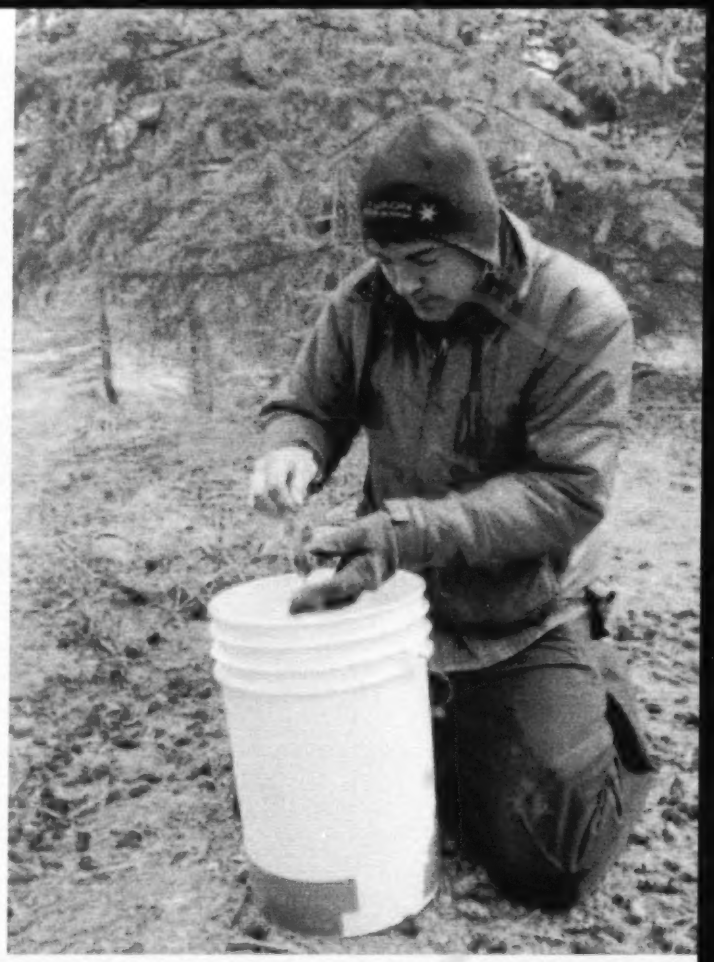


Community Ecological Monitoring Program (CEMP) 10-Year Review

CEMP is a collaborative program that tracks key species in the Yukon boreal forest ecosystem. It helps illustrate long-term trends by collecting information at the same locations each year. This data shows regional patterns of ecosystem change. By being able to understand relationships and predict changes, managers can be proactive and take actions to reduce risks for important wildlife species. This year, we completed a 10-year review of data from monitoring locations around the Yukon. At this time, the conclusions that can be drawn from the CEMP program are tentative, but are based on a solid foundation that is only getting stronger over time.

Here are some of the key findings:

- Snowshoe hares are central to the Boreal ecosystem. In the Yukon, hares make up almost 50% of available food for predators (compared to moose which only make up about 10%). Their numbers fluctuate over a 10-year cycle that appears to be in sync across Yukon. However, the number of hares during peaks in the cycle appears to be diminishing and it is not clear why.
- Monitoring the number of lynx shows there may be a relationship between predator numbers and hare populations. However, in some locations lynx numbers don't change substantially, which may mean they switch to eating different species when hares are less abundant.
- Spruce cone production varies between monitoring locations, but follows a similar pattern across Yukon and seems to be influenced by temperatures and spring rains.
- Monitoring crowberry, cranberry, and bearberry crops indicates that berries respond to regional weather patterns, but individual species respond in different ways.
- Mushroom crop information has helped create a model that predicts mushroom production based on climate information.
- Data from Kluane shows a four-year pattern in red-backed vole populations. Further information is required to understand the relationship between voles and other parts of the food web.



Food Webs: what does climate change have to do with it?

A food web describes the interconnected links between animals and the things they eat, and then the things that eat them in turn. Understanding how climate change impacts the web's foundations, like berries, cones and mushrooms, and how changes in these populations affect animals that eat them and others further up the food chain helps us make better decisions about how we can manage populations people depend on, like moose or caribou.

Technical Reports

More information about results from Fish and Wildlife Branch programs and projects can be found online at: **www.env.gov.yk.ca/fwreports**. Every report starts with a brief summary of the project and key findings, for those readers wanting a quick look at what we learned.

MR-14-02	Aviation policy review of wildife agencies in Canada
MRC-13-01	Range assessment as a cumulative effects management tool
MRC-15-01	CCH Range Assessment - Final Report
MRC-15-02	Large Mammal- Vehicle Collisions
PR-13-03	Conserving and monitoring little brown bat (Myotis lucifugus) colonies in Yukon: 2012 Annual Report
PR-13-04	Wolverine carcass collection program: 2013 progress report.
PR-14-03	Conserving and monitoring little brown bat (Myotis lucifugus) colonies in Yukon: 2013 Annual Report
PR-14-04	Celebration of Swans
PR-14-05	Wild discoveries
SR-13-04	Hunter satisfaction: A survey of Yukon licensed moose and caribou hunters.
SR-13-05	Hunter effort survey: Resident sheep and goat hunters, 2012.
SR-14-01	Pika survey 2013
SR-14-02	Conrad campground survey
SR-14-03	Gyrfalcon Survey North Yukon 2014
TR-10-20	AHS Snafu Lakes, 2010
TR-12-09	AHS Nares R 2009
TR-12-10	AHS Tagish Bridge 2007
TR-12-12	Lake Trout Population Assessment Sekulmun Lake 2010
TR-12-25	M'Clintock Early winter 2011 moose survey
TR-12-32	Moose Mayo MMU
TR-13-01	Distribution of the Ogilvie Mountains Collared Lemming in Tombstone Territorial Park, Yukon.
TR-13-02	Moose and caribou survey: Carmacks West-Casino Trail, late-winter 2011.
TR-13-03	Moose Survey: Lower Stewart River West – White Gold area, Early-winter 2012
TR-13-14	Moose survey, Whitehorse south early-winter, 2010.
TR-13-15	Niche overlap and the potential for competition between reintroduced bison and other ungulates in southwestern Yukon.
TR-13-16	Moose Survey: Rackla area, late winter 2013.
TR-14-01	Burbot Population Assessment Little Fox Lake 2011
TR-14-02	Burbot Population Assessment Little Fox Lake 2012
TR-14-03	AHS Lubbock 2010
TR-14-04	Lake Trout Population Assessment Kluane Lake 2014
TR-14-05	Burbot population Assessment: Squanga Lake 2013
TR-14-08	AHS Dezadeash Lake
TR-14-09	Lake Trout Population Assessment Fox Lake
TR-14-10	Lake Trout Population Assessment Caribou Lake

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